

FINDING OF NO SIGNIFICANT IMPACT
TENNESSEE VALLEY AUTHORITY
INSTALLATION OF FLUE GAS DESULFURIZATION SYSTEM
ON BULL RUN FOSSIL PLANT
ANDERSON COUNTY, TENNESSEE

Proposed Action and Need

The purpose of the proposed project is to reduce sulfur dioxide (SO₂) emissions from the Tennessee Valley Authority (TVA) Bull Run Fossil Plant (BRF) by installing flue gas desulfurization (FGD) equipment that employs the wet limestone forced oxidation technology. TVA needs to reduce SO₂ emissions at BRF to meet requirements under the 1990 Clean Air Act amendments.

The scrubber would assist TVA in maintaining compliance with the United States Environmental Protection Agency's Title IV regulations for the Acid Rain Program. The Title IV regulations require reductions and caps for utility industry SO₂ emissions. Compliance with the regulations is based on emission allowances. Currently, TVA is allocated 430,000 tons of SO₂ allowances per year. In 2003, TVA's emissions were 583,000 tons, and compliance was maintained by utilizing existing SO₂ emission allowances.

Alternatives

Commercially available technologies were initially considered for application at BRF. Compatibility with existing operating and maintenance systems at the plant were the major considerations resulting in selection of wet limestone scrubbing as the proposed application at BRF. A sodium-based scrubber for a portion of the SO₂ emissions was briefly considered but eliminated due to time constraints.

Under a No Action Alternative, no FGD or other system for SO₂ reduction from BRF would be installed. A No Action Alternative would not meet TVA's goal to reduce SO₂ emissions from BRF. The No Action Alternative for BRF would likely result in the need to reduce SO₂ emissions from other TVA fossil plants or require purchase of additional pollution credit allowances.

Impacts Assessment

The FGD system for BRF would be an addition to an expansive, heavy industrial facility having a significant property buffer, located in an area that has been heavily disturbed by previous plant developmental activities. No new facilities would be required to unload equipment transported to the site. Therefore, the potential would be small for on-site construction impacts to terrestrial ecology, aquatic ecology, noise, land use, air quality, and visual aesthetics. This system would produce gypsum (a new byproduct for BRF) and also result in a change in the characteristics of the effluent emanating from the byproduct disposal facility. Operational impacts are primarily dependent upon the engineering features and safeguards included in the design of the FGD system and the environmental commitments. These features and safeguards listed in Table 1 would minimize the probability and extent of release of pollutants to the environment.

Table 1. Summary and Comparison of Alternatives By Resource Area		
Issue Area	Impacts from No Action Alternative	Impacts from Proposed Action Alternative
Air Quality	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Impacts to local and regional air quality would be minor but beneficial with the addition of the scrubber
Transportation	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Insignificant impacts from truck, rail or barging of limestone and gypsum with addition of a new intersection on SR 170
Visual Resources	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • A visible water vapor plume will be present when the scrubber is operational
Noise	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Insignificant with acoustic wall for rail limestone unloader
Surface Water	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Insignificant with Aquatic Resource Alteration Permit, U.S. Army Corps of Engineers 404 permit, Modification of the National Pollutant Discharge Elimination System permit, Modification of the Storm Water Pollution Prevention Permit, and approval of Storm Water Construction Permit
Wastewater	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • No off-site impacts with a commitment not to stack barges in the condenser cooling water discharge channel at the proposed barge facility
Groundwater Quality	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Insignificant increases in contaminants of concern with or without liner in solid waste landfill
Coal Combustion Byproduct Generation, Handling, Disposal and Marketing	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Faster depletion of on-site coal combustion byproduct disposal capacity from the addition of a new gypsum waste stream; TVA proposes to market gypsum in order to extend the life of on-site disposal options
Floodplains	<ul style="list-style-type: none"> • None 	
Aquatic Ecology	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • None
Terrestrial Ecology	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • None
Protected and Sensitive Species	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • None
Wetlands	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • None
Managed Areas and Ecologically Significant Sites	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • None
Cultural Resources	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • None

Table 1. Summary and Comparison of Alternatives By Resource Area		
Issue Area	Impacts from No Action Alternative	Impacts from Proposed Action Alternative
Socioeconomics	• None	• None
Environmental Justice	• None	• None

Commitments and Mitigation Measures

The proposed action contains routine and compliance measures including the use of Best Management Practices (BMPs) listed in Section 2.4 of the EA to minimize environmental impacts from wastewater and fugitive dust emissions. In addition, to further mitigate adverse effects of the project, the following special commitments would be followed:

- To avoid a National Pollutant Discharge Elimination System (NPDES) discharge water temperature violation, care must be taken to ensure that numerous barges do not remain moored in the condenser cooling water discharge channel for extended periods of time. Experience at other TVA plants has shown that barges stacked two to four deep on moorings have caused excess upstream migration of heated discharge water. Therefore, the facility will not moor barges in the condenser cooling water discharge channel.
- Portable toilets and existing facilities will be provided for the additional scrubber construction workforce. Outages occur routinely, and those additional workers will be handled by portable toilets. All portable toilets will be regularly pumped out and the sewage transported by tanker truck to a publicly owned treatment works accepting pump out.
- In order to reduce noise experienced at nearby residences, an acoustic wall will be built for the limestone dumper.

Public and Intergovernmental Review

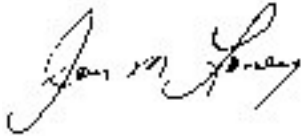
The Draft Environmental Assessment (EA) was sent to the agencies listed below for comments:

- National Park Service
- Tennessee Department of Environment and Conservation
- U. S. Army Corps of Engineers
- U. S. Fish and Wildlife Service

Conclusion and Findings

Based on the attached EA, Environmental Policy and Planning's National Environmental Policy Act (NEPA) Administration staff has determined that the potential environmental consequences of TVA's proposed action to construct and operate the FGD system have been adequately assessed and that the proposed action, with implementation of commitments and mitigation measures, is not a major Federal action significantly affecting the quality of the environment. Accordingly, an Environmental Impact Statement is not required. The U.S. Fish and Wildlife Service concurs that the Indiana bat and Gray bat are not "likely to be adversely affected," fulfilling TVA's obligations under Section 7 of the Endangered Species Act. Further, the

Tennessee SHPO concurs that the proposed scrubber project will not affect historic properties and that TVA's obligations under Section 106 of the National Historic Preservation Act have been met.



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Date Signed